

**NATURAL RESOURCES CONSERVATION SERVICE**  
**Wyoming**  
**CONSTRUCTION SPECIFICATIONS**  
**FOR**  
**GRASSED WATERWAY**

(Owner/Operator)	(Project/Title)
<b>GENERAL</b>	
<p>Installation shall be in accordance with an approved design and plan. Details of construction shown on the drawings but not included herein are considered as a part of this specification. Construction activities shall be in accordance with applicable OSHA regulations.</p>	<p>and compacted to prevent unequal settlement. Over excavate and cover subsoil areas exposed during shaping with a 4-inch layer of compacted topsoil.</p>
<p>Plan to construct waterways during years when the majority of fields in the watershed above the waterway are in high residue producing crops such as hay, small grains or cover crops. Also, plan farming and tillage practices on fields adjacent to waterway that will reduce runoff into the waterway during the vegetative establishment period.</p>	<p>After shaping, smooth the waterway to allow seedbed preparation without further grading.</p>
<b>SITE PREPARATION</b>	<p>When conditions do not permit plant establishment adequate to control erosion prior to the onset of winter, furrows may be plowed on both sides of the waterway to keep runoff from entering the waterway during the first winter. Side furrows will be filled in once the waterway vegetation is established.</p>
<p>Trees, brush, stumps, and other obstructions, unless otherwise shown on the drawings, shall be removed and be disposed of so they will not interfere with construction or proper functioning of the waterway or outlet.</p>	<b>VEGETATIVE SPECIFICATIONS</b>
<b>EARTHWORK</b>	<p><u>Seedbed Preparation.</u> Prepare a clean, firm seedbed. Final seedbed will be firm enough so a person's heel will sink from 1/2 to 3/4 inch when walking over the waterway.</p>
<p>Waterways and outlets shall be constructed or shaped to equal or slightly exceed the dimensions as shown on the plans or staked in the field. All earth removed and not needed in construction of the waterway shall be spread or disposed of so it will not interfere with surface water from flowing into the waterway. The filling of gullies and washes shall be in layers of 4 to 6 inches</p>	<p><u>Time of Seeding.</u> Plant grasses any time moisture is adequate for plant establishment. Plant legumes during frost-free periods shown in ADDITIONAL SPECIFICATIONS, and when moisture is adequate for plant establishment.</p>
	<p><u>Seeding Mixture.</u> Use an adapted species or mixture from Table I unless otherwise shown in ADDITIONAL SPECIFICATIONS. A cover crop may be used when needed to help control erosion. Cover crops will be planted at a rate of less than eight (8) plants per square foot.</p>

Method of Planting. Drill seed 1/4 to 1/2 inch deep. The drill spacing will not exceed eight (8) inches. Seed will be drilled in two passes, the first up and down the waterway, the second in a zigzag or serpentine pattern back and forth across the waterway. Nurse crops will be drilled in a separate seeding operation.

#### ADDITIONAL SPECIFICATIONS

Fertilizer. Where annual precipitation exceeds 14 inches, fertilize with 20 pounds Nitrogen and 20 pounds Phosphorus per acre at planting.

Mulching. Unless otherwise specified mulching shall be applied as follows:

<u>Material</u>	<u>Minimum Amount to Apply</u>
Straw	3 tons/ac
Hay	3 tons/ac
Sawdust	7 tons/ac

#### NETTING

After completion of the seeding, erosion control netting shall be installed along the waterway centerline, unless otherwise specified on the drawings or ADDITIONAL SPECIFICATIONS. The minimum width for the installed netting shall be as shown on the drawings. The netting may be any commercially available product unless otherwise specified. The netting shall be anchored on the sides, at splices, and at other locations as per manufacturer recommendations with pins or staples.

#### MAINTENANCE

After establishment, fertilize and mow as needed to maintain a thick sod. Perform tillage operation adjacent to the waterway in a manner that will not build dikes or berms or ditches along the edges of the waterway.

TABLE 1  
GRASS WATERWAY  
PLANTING RECOMMENDATIONS

RECOMMENDED SPECIES			AVERAGE ANNUAL PRECIPITATION					IRRIGATION/ WETNESS/ DROUGHT			BROADCAST SEEDING RATE LBS/PLS/AC	DRILL SEEDING RATE LBS/PLS/AC
	FORM	HEIGHT	10-12	12-14	14-16	16-18	18+	IR	W	D		
BLUEGRASS, KENTUCKY	SOD	SHORT				X	X	X			9	6
BROME, SMOOTH	SOD	MEDIUM			X	X	X	X			18	12
BROME, MEADOW	SOD	TALL			X	X	X	X			24	18
CANARYGRASS, REEDS	SOD	TALL				X	X	X	X		9	6
FESCUE, HARD	BUNCH	SHORT				X	X	X			8	5
FESCUE, RED	SOD	SHORT					X	X			9	6
FESCUE, SHEEP	BUNCH	SHORT	X	X	X	X	X	X			8	5
FESCUE, TALL	BUNCH	TALL				X	X	X	X		12	8
FOXTAIL, CREEPING	SOD	TALL				X	X	X	X		8	5
ORCHARDGRASS	BUNCH	TALL					X	X			8	5
REDTOP	SOD	TALL				X	X	X	X		3	2
TIMOTHY	BUNCH	TALL				X	X	X	X		8	5
WHEATGRASS, CRESTED	BUNCH	MEDIUM	X	X						X	12	8
WHEATGRASS, INTERMEDIATE	SOD	TALL		X	X	X		X		X	24	18
WHEATGRASS, PUBESCENT	SOD	TALL		X	X	X		X		X	24	18
WHEATGRASS, SIBERIAN	BUNCH	MEDIUM	<X	X						X	12	9
WHEATGRASS, STREAMBANK	SOD	SHORT	<X	X	X					X	18	12
WHEATGRASS, TALL	BUNCH	TALL			X	X	X	X	X		24	18
WHEATGRASS, THICKSPIKE	SOD	MEDIUM	<X	X	X					X	18	12
WHEATGRASS, WESTERN	SOD	SHORT		X	X	X		X		X	12	9

Seeding rates are based on NRCS Critical Area Planting standards – 1.5 times normal seeding rates for both drill and broadcast applications.

Seed selection should be based on soil, climate, wetness or droughtiness of site, and availability of irrigation water for establishment.

In general, a mixture of species that covers all site conditions from bottom of grass waterway to top of bank is recommended.